patch, present in F₁ and backcross hybrids, from the shadow produced by the tomium of the maxillary ramphotheca in Ross's Goose.

LITERATURE CITED

Cooke, F., & F. G. Cooch. 1968. The genetics of the polymorphism in the goose *Anser caerulescens*, Evolution 22: 289-300.

Graves, G.R. 2005. Blue-phase Ross' Geese on Assateague Island, Virginia. Raven 74: 68-69.

Graves, G.R. 2007. Ross's × Snow goose hybrids on Assateague Island, Virginia. Raven 78: 7-9.

MacInnes, C.D., R.K. Misra, & J.P. Prevett. 1989. Differences in growth parameters of Ross' Geese and Snow Geese: evidence from hybrids. Canadian Journal of Zoology 67: 286-290.

McLandress, M.R., & I. McLandress. 1979. Blue-phase Ross' Geese and other blue-phase geese in western North America. Auk 96: 544-550.

Mundy, N.I., N.S. Badcock, T. Hart, K. Scribner, K. Janssen, & N.J. Nadeau. 2004. Conserved genetic basis of a quantitative plumage trait involved in mate choice. Science 303: 1870-1873.

Ryder, J.P., & R.T. Alisauskas. 1995. Ross' Goose (*Chen rossii*), No. 162. Pp. 1-27 *in* A. Poole & F. Gill (eds.), The Birds of North America. The Academy of Natural Sciences, Philadelphia and The American Ornithologists' Union, Washington, DC.

Trauger, D.L., A. Dzubin, & J.P. Ryder. 1971. White geese intermediate between Ross' Geese and Lesser Snow Geese. Auk 88: 856-875.

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Banisteria, Number 34, pages 49-51 © 2009 Virginia Natural History Society

TWO AUSTRAL WATER BEETLES NEW TO THE VIRGINIA FAUNA (COLEOPTERA: DYTISCIDAE, HYDROPHILIDAE). – The "Floridian" aspect of the fauna of southeastern Virginia continues to be emphasized by recent discoveries of insects previously known only from more southern distributions. We provide here documentation for two small water beetles which fall into that category, being previously unknown north of North Carolina.

DYTISCIDAE: Hydroporinae: Bidessini Anodocheilus exiguus (Aubé)

In the faunistic study begun by Michael & Matta (1977), Anodocheilus was included in the key to dytiscid genera of eastern United States (and by context, of Virginia). However, this minute species (length 1.4-1.7 mm) remains unrecorded for Virginia, perhaps, in part, because its subfamily (Hydroporinae) was not treated by these authors. Furthermore, Matta (1973, 1979) did not record A. exiguus during his surveys of water beetles of the Dismal Swamp (cities of Chesapeake and Suffolk, Virginia, and adjacent North Carolina). It is the lone representative of Anodocheilus in North America, documented previously from North Carolina south to Florida and west to Texas (Ciegler, 2003). Ciegler (2003) provided six records for South Carolina, but we have not determined the basis for the earlier citation of North Carolina by Brigham (1982). The NCSU collection has no material from North Carolina nor was it listed for that state by Brimley (1938) or Wray (1967). Ciegler (2003) reported the habitats of this species as ponds and the sandy edges of lakes, streams, and ditches.

We have seen 14 specimens from Virginia: City of Chesapeake: without precise location ("Chesapeake, Va."), 15 June 1972, J. F. Matta (USNM 4). City of Virginia Beach: "Site 55, Va. Beach, Va.", 28 October 1970, Matta (USNM 6); without specification but probably the historic resort area ("Va. Beach, Va."), 20 November 1970, Matta (USNM 2); same but 11 July 1972, Matta (USNM 1); False Cape State Park, Main Park Road, 1.4 km south of Wash Woods cemetery, 8 September 2006, UV light trap, S. M. Roble (VMNH 1).

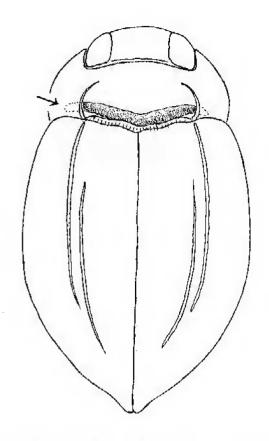


Fig. 1. Dorsal view of *Anodocheilus exiguus*; arrow indicates position of pronotal groove.

There is some variation in development of the pronotal groove, which is almost obliterated in some specimens. In the VMNH specimen it is well defined, and laterally extends <u>under</u> each pronotal plica as a small pocket (Fig. 1, arrow). Otherwise, it agrees closely with the descriptions of the species published by Young (1974) and Ciegler (2003).

HYDROPHILIDAE: Hydrophilinae: Hydrophilini *Helobata larvalis* (Horn)

This small beetle (5-6 mm) was not included in the survey of Virginia's aquatic hydrophilids by Matta (1974), and apparently the species (and genus) has not been recorded for the state until now. Like the preceding species, *H. larvalis* is the lone representative of its genus in North America, inhabiting southeastern United States from North Carolina south to Florida and west to Texas; it also occurs in Central and South America and Cuba (Ciegler, 2003). In South Carolina, Ciegler (2003) recorded it on submerged leaves of

Pontederia and at UV lights. We have at hand a small series from the extreme southeastern corner of Virginia, where it was collected by the second author at a UV light trap. City of Virginia Beach: False Cape State Park, Wash Woods Environmental Education Center, 6-7 July 2005, S. M. Roble (VMNH 3).

Brigham (1982) and Ciegler (2003) previously reported this species from North and South Carolina, respectively. Warren Steiner (pers. comm.) has collected *H. larvalis* at Buxton, Cape Hatteras, Dare Co., North Carolina (USNM), which appears to be the previous northernmost locality for the species. Dr. Andrew Short advised (*in litt.*) that he saw no Virginia material in the collections examined by him in connection with a survey of this genus.

ACKNOWLEDGEMENTS

We appreciate the help provided by Robert L. Blinn, Andrew Short, Warren Steiner, and Charles Staines during preparation of this note.

LITERATURE CITED

Brigham, W.U. 1982. Aquatic Coleoptera. Pp. 10.1-10.136 *In* A.R. Brigham, W.U. Brigham, & A. Gnilka (eds.), Aquatic Insects and Oligochaetes of North and South Carolina. Midwest Aquatic Enterprises, Mahomet, IL.

Brimley, C.S. 1938. The Insects of North Carolina, Being a List of the Insects of North Carolina and Their Near Relatives. North Carolina Department of Agriculture, Raleigh. 560 pp.

Ciegler, J.C. 2003, Water Beetles of South Carolina (Coleoptera: Gyrinidae, Haliplidae, Noteridae, Dytiscidae, Hydrophilidae, Hydraenidae, Scirtidae, Elmidae, Dryopidae, Limnichidae, Heteroceridae, Psephenidae, Ptilodactylidae, and Chelonariidae). Biota of South Carolina Vol. 3. Clemson University, Clemson, SC. 210 pp.

Matta, J.F. 1973. The aquatic Coleoptera of the Dismal Swamp. Virginia Journal of Science 24: 199-205.

Matta, J.F. 1974. The Aquatic Hydrophilidae of Virginia (Coleoptera: Polyphaga). The Insects of Virginia 8: 1-44.

Matta, J.F. 1979. Aquatic insects of the Dismal Swamp. Pp. 200-221 *In* P. W. Kirk, Jr. (ed.), The Great Dismal Swamp. University Press of Virginia, Charlottesville.

Michael, A.G., & J.F. Matta. 1977. The Dytiscidae of Virginia (Coleoptera: Adephaga) (Subfamilies Laccophilinae, Colymbetinae, Dytiscinae, Hydaticinae, Cybistrinae). The Insects of Virginia 12: 1-53.

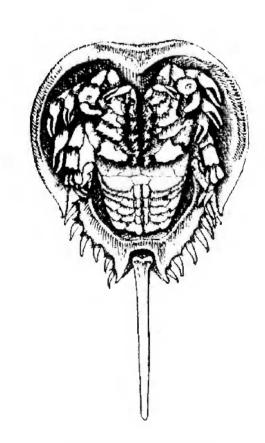
Wray, D.L. 1967. Insects of North Carolina. Third Supplement. North Carolina Department of Agriculture, Raleigh. 181 pp. [includes full text of first and second supplements]

Young, F.N. 1974. Review of the predaceous water beetles of the genus *Anodocheilus* (Coleoptera: Dytiscidae: Hydroporinae). Occasional Papers of the

Museum of Zoology, University of Michigan No. 670. 28 pp.

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Horseshoe crab (*Limulus polyphemus*), ventral aspect. Original drawing by John Banister.